CLAIMS

WHAT IS CLAIMED IS:

1. A method for producing a hierarchical data file for a multimedia document, the data file having different file formats encapsulated within the data file, the method comprising:

    a. encapsulating in a multimedia document a first file support object including information in a first file format;

    b. supporting the first file support object by the multimedia document;

    c. encapsulating in the multimedia document a second file support object including information in a second file format different from the first file format; and

    d. supporting the second file support object by the multimedia document.

2. The method of claim 1, further comprising changing at least one of the objects in the data file.

3. The method of claim 1, further comprising adding at least one object to the data file.

4. The method of claim 1 wherein the data file is displayed in a window on a computer display, the method further comprising:

    a. creating an exclusionary area within the window; and

    b. locating an object within the exclusionary area, the object being selected from a group of data objects including a framed image, a slide show, framed text, sound data, a separator, or a hyperlink.

5.   The method of claim 1 wherein the data file includes splash image data defining a splash image, the method further comprising locating the splash image data within the data file such that the splash image is displayed on a computer display as the splash image data is received by a receiver coupled to the computer display.

6.   The method of claim 5, further comprising locating update splash data that further defines the splash image within the data file such that the splash image is updated on the computer display as the receiver receives the update splash data.

7.   The method of claim 1, further comprising providing each object with an address indicating a player that plays the object.

8.   The method of claim 1, further comprising compressing the information in each object.

9.   The method of claim 1 wherein the data file is downloaded by a receiving computer, the method further comprising:
       a.   creating an unknown object in the data file; and
       b.   locating player data within the unknown object defining a player that plays the unknown object.

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10. A hierarchical data file structure that encapsulates a plurality of different file formats to form a multimedia document, the multimedia document being capable of being displayed on a display of a computer system, the data file comprising:

a. a document including information for controlling the display;

b. a first support object including information in a first file format, the first support object being encapsulated in the document and being capable of supporting a plurality of first lower objects, each first lower object being a lower level object than the first support object in the hierarchical data file structure; and

c. a second support object including information in a second file format different from the first file format, the second support object being encapsulated in the document and being capable of supporting a plurality of second lower objects, each second lower object being a lower level object than the second support object in the hierarchical data file structure.

11. The hierarchical data file structure of claim 10 wherein the first file format is selected from a group of file formats including a textual file format, an image file format, and a sound file format; and wherein the second file format is selected from a group of file formats including a textual file format, an image file format, and a sound file format.

12. The hierarchical data file structure of claim 10 wherein, when an operation is performed on a higher level object of the hierarchical data file structure, the operation is also performed on all objects occupying a lower level in the hierarchy than the higher level object.

13. The hierarchical data file structure of claim 10 wherein each object has a plurality of common attributes, including a command for perception of the object, an ability to pass and receive a message, and an ability to supply and retrieve the data embodied in the object.

14. The hierarchical data file structure of claim 10 wherein each object is a generic element of the hierarchical data file structure, such that any combination of objects can be grouped together to form a part of the multimedia document.

15. The hierarchical data file structure of claim 10 wherein the document forms a code segment that receives image information; and wherein the image information is used to construct an image frame for a framed image that is part of the multimedia document.

16. The hierarchical data file structure of claim 15 wherein the framed image has an image data format; and wherein a decoder determines the image data format and encapsulates the framed image with the image frame.

17. A file format for storing a plurality of different types of data so that the plurality of data types can be displayed on a computer display as a multimedia document, the multimedia document including a plurality of multimedia object files, the multimedia document being embodied in a hierarchical data file, each object file having a level in the hierarchy of the data file, the file format comprising:

    a.   a header;

    b.   an object archive for storing information about the plurality of object files, including information about the level of each multimedia object file within the hierarchy; and

    c.   a multiplex section including data for each of the multimedia object files of the multimedia document.

18. The file format of claim 17 wherein the multimedia object files in the multiplex section are each played by a player as the multiplex object file is received by a receiver.

19.   The file format of claim 17 wherein the data for at least some of the multimedia object files is interleaved.

20.   The file format of claim 17 wherein the object archive includes data defining geometry of the multimedia document.

21.   The file format of claim 17 wherein each of the multimedia object files is defined by at least one data slice; and wherein the multiplex section further includes:

    a.   an object number counter indicating the number of multimedia object files following the object number counter;

    b.   a plurality of object descriptions, each object description corresponding to one of the multimedia object files, each object description including an object reference that refers to the corresponding object information in the object archive and a flag indicating whether the corresponding object data is compressed; and

    c.   a choreography group providing information about a first group of multimedia object files.

22.   The file format of claim 21 wherein each multimedia object file is divided into at least one data slice and the choreography group includes:

    a.   an object counter indicating the number of multimedia object files in the choreography group;

    b.   size and type data for each multimedia object file;

    c.   header data; and

    d.   the data slices of the multimedia object files interleaved together.

23.   The file format of claim 17, further comprising a non-multiplex section following the multiplex section, the non-multiplex section including a plurality of separate object files that are not played by a player as the separate object files are received by a receiver.

24.	A method of encoding a framed image in a frame, the frame to be included as part of a multimedia document, the multimedia document encapsulating data in a plurality of file formats and being capable of being displayed on a display of a computer, the computer including a player, comprising:

5	a.	placing an image into the multimedia document;

b.	receiving image information about the image by the player;

c.	decoding the image information;

d.	sending the decoded image information to the multimedia document; and

e.	enclosing the decoded image information into a frame in the multimedia

10	document.

25.	A method for multiplexing data in a multiplex message that includes data in a plurality of file formats, the file formats being selected from a group of file formats including a textual file format, an image file format, and a sound file format, the multiplex message forming at least a portion of a multimedia

5	document and including a plurality of object files, each object file being represented by at least one data slice, the method comprising:

a.	providing an object number counter in the data file indicating the number of object files following the object number counter in the data file;

b.	providing a plurality of object descriptions, each object description describing a corresponding one of the object files; and

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c.	providing a choreography group including the data slices of the object files interleaved in a predetermined manner.

26.	The method of claim 25, further comprising providing a first player pointer including an address of a player that plays the choreography group.

27.	The method of claim 25 further comprising locating a plurality of slice size data blocks before the interleaved data slices, each slice size data block corresponding to one of the data slices and providing a size of the corresponding data slice.

28.   A file format for storing a plurality of different types of data so that the plurality of data types can be displayed on a computer display as a multimedia document, the multimedia document including a plurality of multimedia object files, the multimedia document being embodied in a hierarchical data file, each object file having a level in the hierarchy of the data file, the file format comprising an object archive for storing information about the plurality of object files, including information about the level of each multimedia object file within the hierarchy.

29.   A file format for storing a plurality of different types of data so that the plurality of data types can be displayed on a computer display as a multimedia document, the multimedia document including a plurality of multimedia object files, the file format comprising a multiplex section including data for each of the multimedia object files of the multimedia document.

30.   The file format of claim 29 wherein at least some of the data in the multiplex section corresponding to different object files is interleaved.